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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/284,152	06/03/99	EMALFARB M	3123-4000US2

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EXAMINER	
FRONDA, C	
ART UNIT	**PAPER NUMBER**
1652	6

DATE MAILED: 06/30/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/284,152	Emalfarb et al.
Examiner	**Group Art Unit**
Christian L. Fronda	1652

☐ Responsive to communication(s) filed on _____.

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *1-108* is/are pending in the application.

Of the above, claim(s) *67-79 and 84-108* is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-66 and 80-83* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Election/Restriction

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
   - I. Claims 1-66 and 80-83, drawn to compositions having neutral and/or alkaline cellulase activity and methods for generating mutant Chrysosporium strains, classified in class 435, subclass 400.
   - II. Claims 67-72, drawn to methods of producing a composition having neutral and/or alkaline cellulase activity, classified in class 435, subclass 70.1.
   - III. Claims 73-79, drawn to methods for stonewashing, biopolishing, deinking, and enhancing the softness of fabric, classified in class 435, subclass 263.
   - IV. Claims 84-91 and 96-108, drawn to nucleic acid, vector, host cells, and methods of isolating genes encoding cellulase enzymes of Chrysosporium, classified in class 435, subclass 69.1.

2. The inventions are distinct, each from the other because of the following reasons:

The DNA of group IV is related to the cellulase of group I since the DNA codes for the enzyme. The DNA molecule has utility for the recombinant production of the protein in a host cell. Although the DNA and the protein are related since the DNA encodes the specifically claimed enzyme, they are distinct inventions because the enzyme product can be made by other and materially distinct processes, such as purification from the natural source. Further, the DNA can be used for processes other than the production of the protein, such as nucleic acid hybridization assays. These products would be expected to have distinct functional, chemical, and physical properties and are capable of separate manufacture, use, or sale. The DNA of group IV and the protein of group I have acquired separate status in the art and separate fields of search as further evidenced by their separate classification.

Each of groups II and III is directed to a separate and distinct invention. Group II is directed toward methods of producing a composition having neutral and/or alkaline cellulase activity; and group III is directed toward methods for stonewashing, biopolishing, deinking, and enhancing the softness of fabric. The processes of groups II and III are distinct both physically and functionally; require different process steps, reagents, and parameters; produce different products; and are subject to separate manufacture and sale from each other.

Inventions I and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product

as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the process for using the product as claimed can be practiced with another materially different product such as using cellulases from Bacillus hydrolyticus or Cellulobacillus mucosus.

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the process as claimed can be used to make other and materially different product such as a composition containing a cellulase obtained from Cellulobacillus mucosus.

For these reasons restriction for examination purposes is proper.

3. During a telephone conversation with James Demers on August 13, 1999, a provisional election was made with traverse to prosecute the invention of group I, claims 1-66 and 80-83. Affirmation of this election must be made by applicant in replying to this Office action. Claims 67-79 and 84-108 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to

overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 2, 3, and 7-23 are rejected under the judicially created doctrine of double patenting over claim 1 of U. S. Patent No. 5,811,381 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: the patent states that an embodiment of the invention relates to isolated and purified cultures of wild type and mutant fungi of the genus Chrysosporium capable of producing neutral and/or alkaline cellulase compositions (see column 4, lines 6-10). Furthermore, claims 7-23 are also rejected because they depend on defective claim 2 and these claims do not correct the defect of claim 2.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

7. Claims 1, 5, and 6 are rejected under the judicially created doctrine of double patenting over claim 2 of U. S. Patent No. 5,811,381 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: the patent states that an embodiment of the invention relates to isolated and purified cultures of wild type and mutant fungi of the genus Chrysosporium capable of producing neutral and/or alkaline cellulase compositions, in particular to the strain Chrysosporium lucknownense GARG 27K and mutants thereof (see column 4, lines 6-10).

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

8. Claims 24-27 are rejected under the judicially created doctrine of double patenting over

claims 3-6, respectively, of U. S. Patent No. 5,811,381 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: the patent states that an embodiment of the invention relates to isolated and purified cultures of wild type and mutant fungi of the genus Chrysosporium capable of producing neutral and/or alkaline cellulase compositions (see column 4, lines 6-10).

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

9. Claims 28 and 29 are rejected under the judicially created doctrine of double patenting over claim 9 and 8, respectively, of U. S. Patent No. 5,811,381 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: the patent states that an embodiment of the invention relates to isolated and purified cultures of wild type and mutant fungi of the genus Chrysosporium capable of producing neutral and/or alkaline cellulase compositions (see column 4, lines 6-10).

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

10. Claim 30 is rejected under the judicially created doctrine of double patenting over claim 10 of U. S. Patent No. 5,811,381 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: the patent states that an embodiment of the invention relates to isolated and purified cultures of wild type and mutant fungi of the genus Chrysosporium capable of producing neutral and/or alkaline cellulase compositions (see column 4, lines 6-10).

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

11. Claims 31-35 are rejected under the judicially created doctrine of double patenting over claim 11 of U. S. Patent No. 5,811,381 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: the patent states that an embodiment of the invention relates to isolated and purified cultures of wild type and mutant fungi of the genus Chrysosporium capable of producing neutral and/or alkaline cellulase compositions (see column 4, lines 6-10).

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

12. Claims 36-39 are rejected under the judicially created doctrine of double patenting over claims 12-15, respectively, of U. S. Patent No. 5,811,381 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: the patent states that an embodiment of the invention relates to isolated and purified cultures of wild type and mutant fungi of the genus Chrysosporium capable of producing neutral and/or alkaline cellulase compositions (see column 4, lines 6-10).

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

13. Claims 40-51 are rejected under the judicially created doctrine of double patenting over claims 18-29, respectively, of U. S. Patent No. 5,811,381 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: the patent states that an embodiment of the invention relates to isolated and purified cultures of wild type and mutant fungi of the genus Chrysosporium capable of producing neutral and/or alkaline cellulase compositions (see column 4, lines 6-10).

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968).

See also MPEP § 804.

14. Claims 52-57 are rejected under the judicially created doctrine of double patenting over claims 39-44 of U. S. Patent No. 5,811,381 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: the patent states that an embodiment of the invention relates to isolated and purified cultures of wild type and mutant fungi of the genus Chrysosporium capable of producing neutral and/or alkaline cellulase compositions (see column 4, lines 6-10).

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

15. Claims 58-63 are rejected under the judicially created doctrine of double patenting over claims 30-35, respectively, of U. S. Patent No. 5,811,381 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: the patent states that an embodiment of the invention relates to isolated and purified cultures of wild type and mutant fungi of the genus Chrysosporium capable of producing neutral and/or alkaline cellulase compositions (see column 4, lines 6-10).

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 U.S.C. § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the

manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

17. Claims 2, 4, 10, 22, 23, 24, 25, 27, 28, 29, 30, 31, 33, 34, 35, 36, 37, 39, 40, 41, 43, 44, 46, 47, 49, 50, 52, 53, 55, 56, 58, 59, 61, 62, 64, and 80-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parslow *et al.* in view of Qureshi *et al.*, Hurst *et al.*, and Olson *et al.*.

Parslow *et al.* teach compositions comprising fungal cellulase, surfactants, cationic fabric-softening compound, and builders (see entire US 4,661,289). Parslow *et al.* further teach that these compositions comprising fungal cellulase are useful for cleaning and softening natural and synthetic fibers (see entire US 4,661,289). Parslow *et al.* do not teach the composition of these claims. Qureshi *et al.* teach Chrysosporium tropicum which has neutral and/or alkaline cellulase activity (see entire publication). Hurst *et al.* teach Chrysosporium pannorum which has neutral and/or alkaline cellulase activity (see entire publication). Olson *et al.* teach Chrysosporium lignorum which has neutral and/or alkaline cellulase activity (see column 5, line 37 of US 4,912,056).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make a composition according to these claims by modifying the teachings of Parslow *et al.* in the following manner: select any one of the Chrysosporium sp. taught by Qureshi *et al.*, Hurst *et al.*, and Olson *et al.*; mutate the selected fungus by methods well known in the art such as treatment of fungus with UV irradiation, chemical mutagens such as nitrous acid, and site-directed mutagenesis; select mutant fungus strains with the desired property such as increased cellulase activity by assaying and screening for mutants having an increase of cellulase activity; isolate the cellulase from the selected mutant fungus strain by well known chromatography methods and replace the cellulase component of the composition taught by Parslow *et al.* with this cellulase isolated from the mutant Chrysosporium sp. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to dilute or concentrate the purified enzyme from the mutant Chrysosporium sp. to either 964, 191, or 124 units of cellulase activity per gram of dry composition in order to optimize for cleaning and softening natural and synthetic fibers. One of ordinary skill in the art would be motivated to do this because Qureshi *et al.*, Hurst *et al.*, and Olson *et al.* teach Chrysosporium sp. having

cellulase activity and Parslow *et al.* further teach that compositions comprising cellulases are useful for cleaning and softening natural and synthetic fibers.

Conclusion

18.. No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian L. Fronda whose telephone number is (703)305-1252. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapura Achutamurthy, can be reached at (703)308-3804. The fax phone number for this Group is (703)308-0294. Any inquiry of a general nature or relating to the status of this application should be directed to the Group 1600 receptionist whose telephone number is (703)308-0196.

CLF
June 13, 2000

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